

LIMIT Release Notes

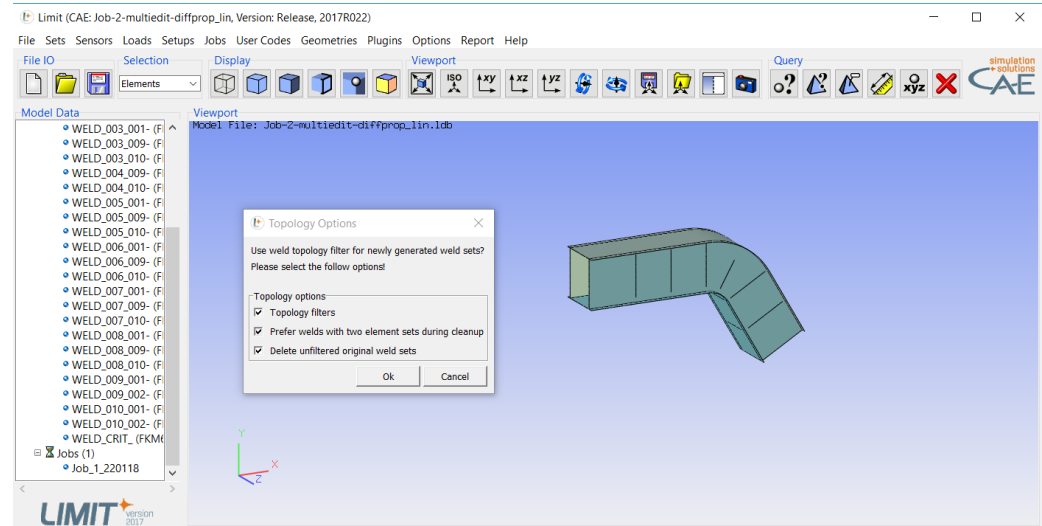
Version LIMIT2017 R22

Novelties in 2017R22

- ✦ Interfaces
- ✦ Topology Filter
- ✦ Extrusion Profiles / Topology Filter
- ✦ FKM Modifications
- ✦ DVS1608 Static Assessment
- ✦ LINUX Version Nastran Nodelocked
- ✦ Improved Stability for Reimport of Models after Remeshing
- ✦ Isolate Weld Sets
- ✦ Long Jobnames supported: 400 Characters
- ✦ Default Array Sizes Increased

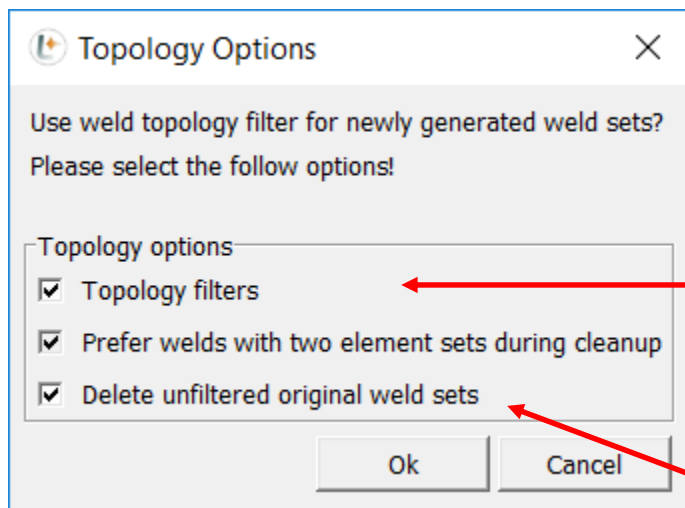
Topology Filter

- ✦ Idea: Detailed topology information helps using MultiEdit and will be used for better default settings in LIMIT2018
- ✦ When generating weld sets by property or by parts a topology filter can be activated! Default is on!
- ✦ Splitting of welds, when topology changes!



Topology Filter

✨ Settings:



activates filter

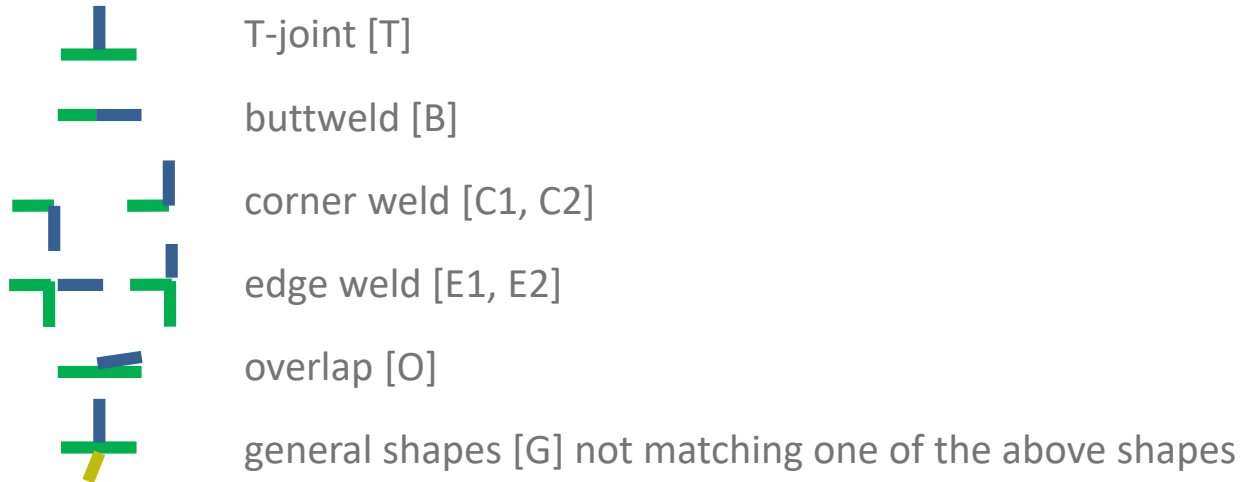
redundant weld sets are removed, but weld sets with only 2 element sets are preferred

keep unfiltered weld sets. These sets are the sets generated in previous LIMIT versions

Topology Filter

✨ Function:

- Classification of topologies:



Topology Filter

✨ Function:

- Shell normal code:
 - Analysis starts with the first element set (blue)
 - Shell normal of blue element is rotated clockwise and passes other normals
 - P marks, if normals are oriented in same direction, N if not
 - Welds with same topology and normal code have same FEA geometry => **MultiEdit**

- Shell normal, e.g. T-joint



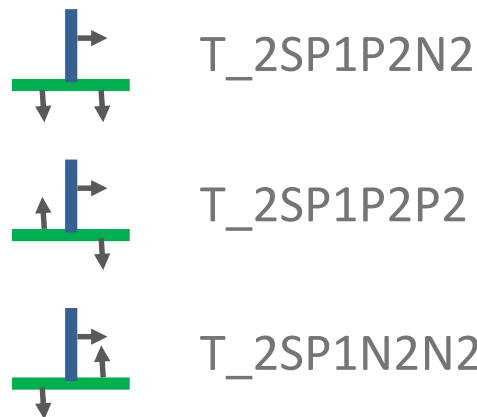
T ...T-joint

2S ... 2 ele. sets

P1 ... positiv Set 1 (checked with itself)

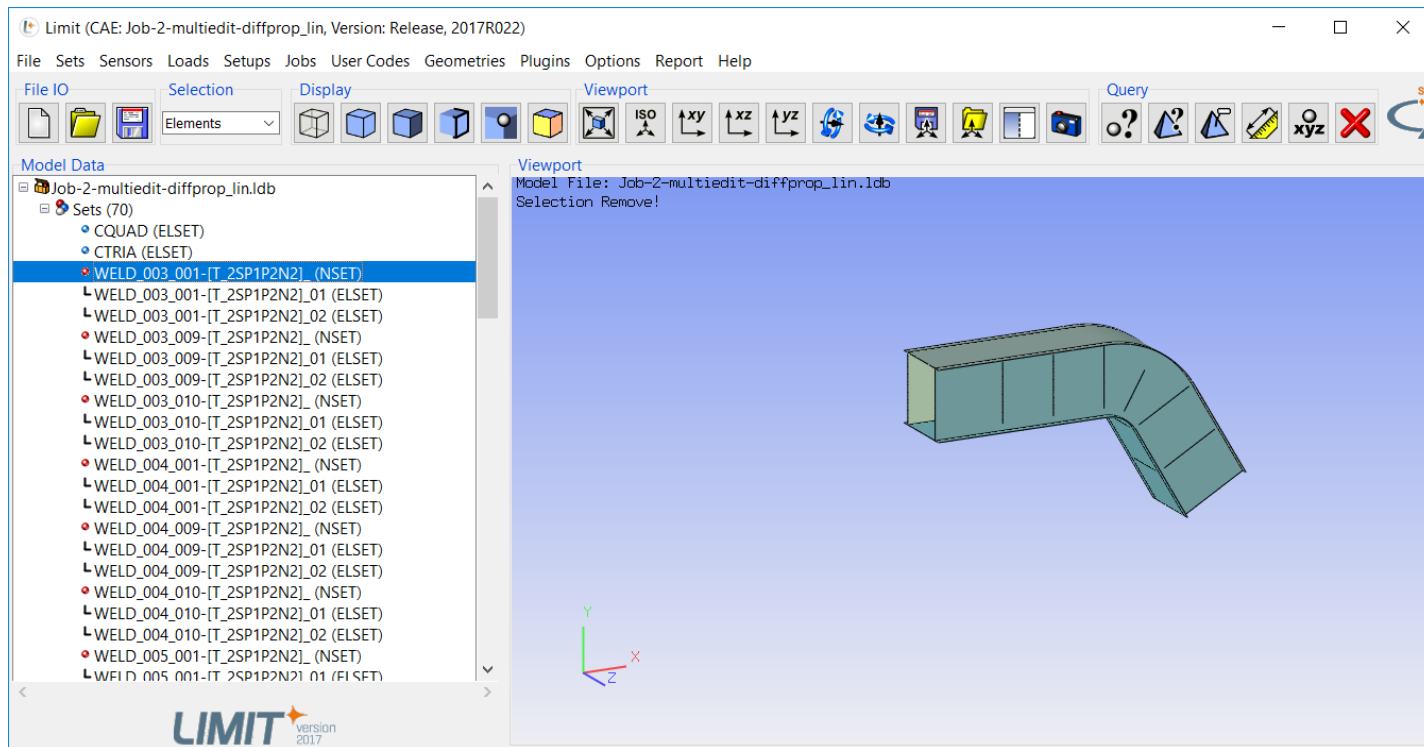
N2 ... negative Set 2

P2 ... positive Set 2



Topology Filter

Result:



Extrusion Profiles / Topology Filter

- ✨ When generating welds between aluminum extrusion profiles not only the real weld position but any change in property or part generated welds.
- ✨ In LIMIT2017R22 extrusion profiles can be marked by simply storing the elements as profile sets. Profile sets are element sets with the prefix “PROF_”. E.g. if the roof of a carbody consists of three profiles you would generate PROF_roof1, PROF_roof2, PROF_roof3.
- ✨ If the topology filter is active, all welds that are generated within on profile are eliminated. Only welds between the profiles remain.

FKM-Modifications

✨ The type of static weld stress can be selected in FKM-EditSetup

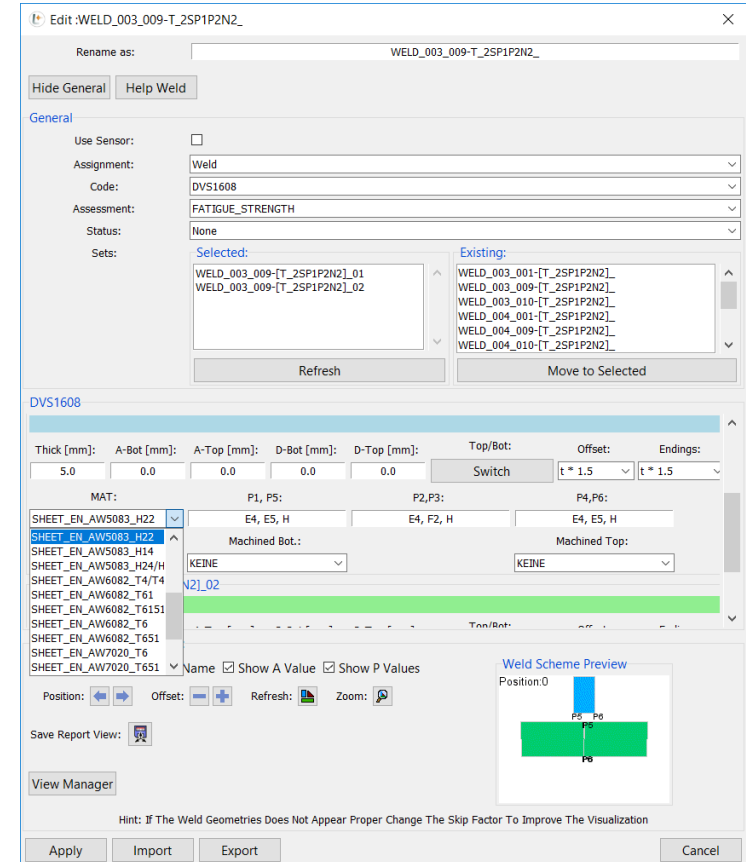
✨ Three possibilities are available:

- Empiric equivalent stress DIN18800: $\text{SQRT}(S_2^2+T^2)$
- Mises, but only lateral and shear stress: $\text{SQRT}(S_2^2+3*T^2)$
- Full Mises: $\text{SQRT}(S_1^2+S_2^2-S_1*S_2+3*T^2)$

✨ KWK, σ_3 was corrected to be 1.0 in case of stresses perpendicular to the surface

DVS1608 Static Assessment

- ✦ All data necessary for static analysis were moved to EditSetup. Material library from DVS1608 was added.
- ✦ The definition is similar to DVS1612
- ✦ To switch to the static assessment the DVS1608_STATIC option must be activated in the JobManager
- ✦ If global definition is used via Edit Keywords (previous method), this will overwrite all setting defined for individual setups!



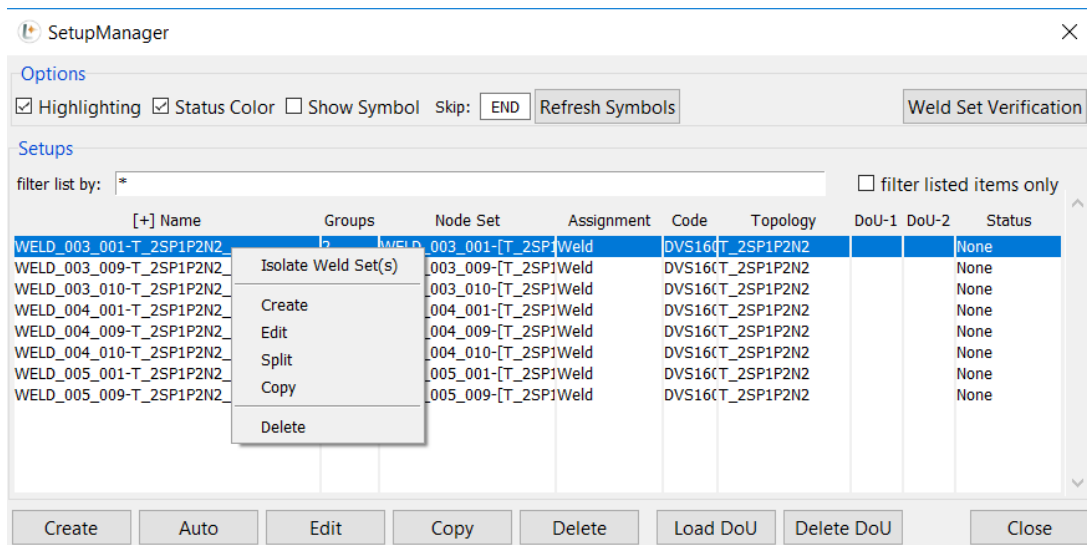
LINUX Version Nastran

- ✨ In the installation directory a new folder can be found:
“limit_bin_linux”
- ✨ Linux versions of the Nastran interface are located inside.
- ✨ Currently only node locked licensing is supported.
- ✨ Some issues concerning case sensitivity in names were resolved!

Isolate Weld Sets

✦ Isolating the weld set directly from the SetupManager is a new feature:

- Mark one or more setups in SetupManager
- Use right mouse button and select “Isolate Weld Set(s)”



Last slide